MISSOURI OIL AND GAS COUNCIL

Form OGC - 3

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

APPLICATION TO DRILL ☒ DEEPEN ☐ PLUG BACK ☐

NAME OF COMPANY OR OPERATOR DNR - GEOL SURVEY DATE Sept. 77

P.O Box 250 (Address) ROLLA (City) MO. (State)

DESCRIPTION OF WELL AND LEASE

Name of lease	Well number	Elevation (ground)
ERDA TS	28	977

WELL LOCATION (give footage from section lines)

40 ft. from (N) (S) sec. line 17 ft. from (E) (W) sec. line

WELL LOCATION Section 30 Township 33 Range 30 County BARTON

Nearest distance from proposed location to property or lease line: NA feet

Distance from proposed location to nearest drilling, completed or applied – for well on the same lease: NA feet

Proposed depth:	Rotary or Cable tools	Approx. date work will start
200	Rotary	

Number of acres in lease: NA

Number of wells on lease, including this well, completed in or drilling to this reservoir: NA

Number of abandoned wells on lease: _____

If lease, purchased with one or more wells drilled, from whom purchased: Name NA Address _____

No. of Wells: producing _____ inactive _____ abandoned _____

Status of Bond NA

Single Well ☐ Amt. _____ Blanket Bond ☐ Amt. _____ ☐ ON FILE ☐ ATTACHED

Remarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone) use back of form if needed.

STRAT TEST

Proposed casing program:				Approved casing – To be filled in by State Geologist			
amt.	size	wt./ft.	cem.	amt.	size	wt./ft.	cem.
	NONE						

I, the undersigned, state that I am the _____ of the _____ (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature _____

Permit Number: 20022

Approval Date: Sept 1977

Approved By: Wallace B. Howe

☒ SAMPLES REQUIRED

☐ SAMPLES NOT REQUIRED

WATER SAMPLES REQUIRED @:

_____

_____

Note: This Permit not transferable to any other person or to any other location.

Remit two copies to: Missouri Oil and Gas Council P.O. Box 250 Rolla, Mo. 65401

One will be returned.

Approval of this permit by the Oil and Gas Council does not constitute endorsement of the geologic merits of the proposed well nor endorsement of the qualifications of the permittee.

MISSOURI OIL AND GAS COUNCIL

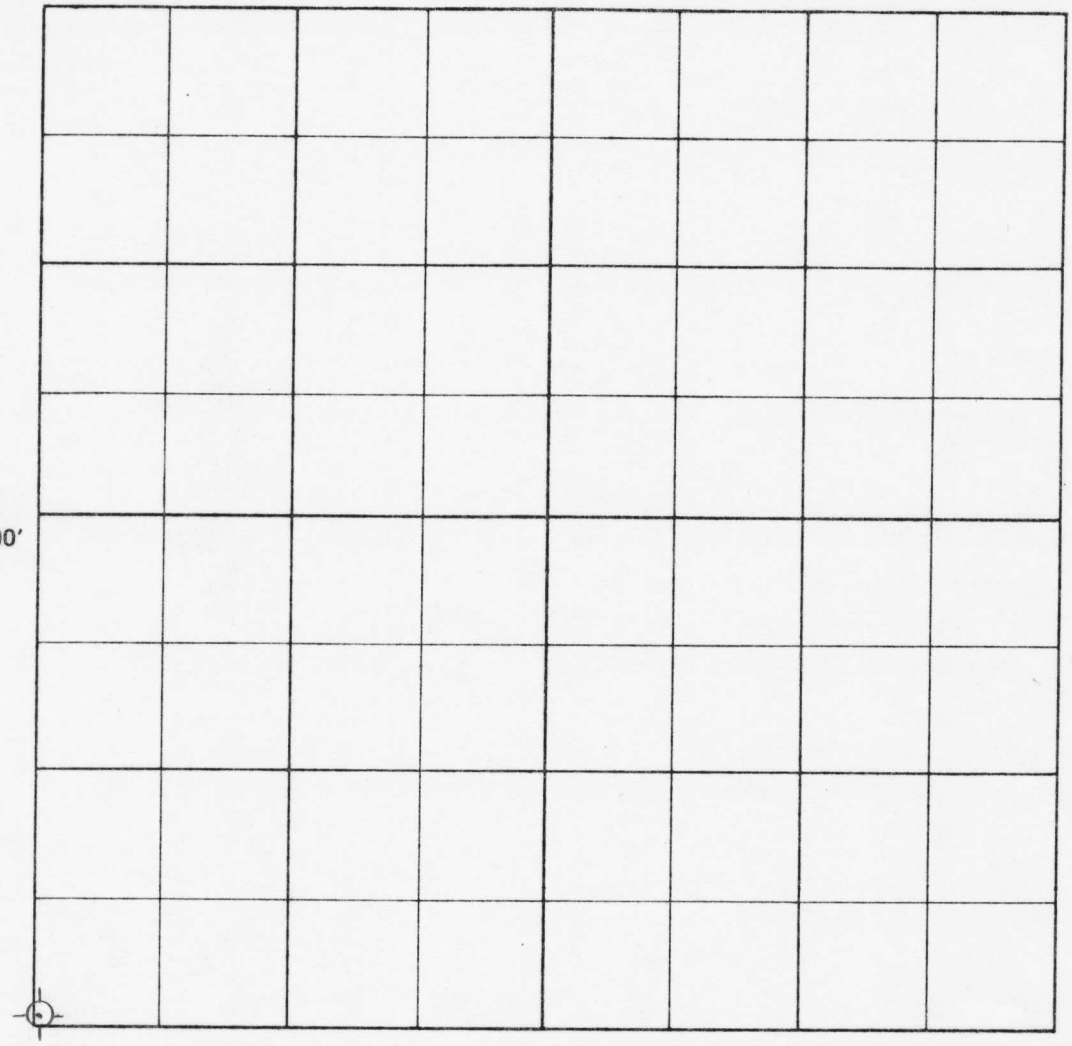
Form OGC - 4

WELL LOCATION PLAT

Owner: DNR - GEOL SURVEY

Lease Name: ERDA TS NO. 28 County, BARTON

40 feet from ~~(N)~~ (S) line and 17 feet from ~~(E)~~ (W) line of Sec. 30 Twp. 33 Range 30



SCALE
1" = 1000'

REMARKS: STRAT TEST (core)

INSTRUCTIONS

On the above plat, show distance of the proposed well from the two nearest lease and section lines, and from the nearest well on the same lease completed in or drilling to the same reservoir. If the location requested is not in conformance with the applicable well-spacing rules, show all off-setting wells to the proposed well. Do not confuse survey lines with lease lines. See rule 7 - 3 (b) for survey requirements.

(SEAL)

Remit two copies to: Missouri Oil and Gas Council
P.O. Box 250 Rolla, Mo. 65401
One will be returned.

Registered Land Surveyor

TEST BORING LOG

Project E.R.D.A. | Boring No. 28 | Sheet 1 of 2

Sec. 30, T. 33N., R. 30W | Surface Elevation 977' | Offset

Address | Date Started 8/8/77 | Completed 8/11/77

City & State Nevada, Missouri | Driller J. Wright | Rig

Abbreviations: A.O. – Auger Only; H.A. – Hollow Auger; W.B. – Wash Bore; R.B. – Rock Bit; S.S. – Split Spoon; S.T. – Shelby Tube; C.W. – Core Water; C.A. – Core Air; F.B. – Finger Bit

DEPTH FROM	DEPTH TO	METHOD	PENETRATION RECORD: POCKET PENETROMETER	PENETRATION RECORD: NO. OF BLOWS	CORE RECOVERY	SAMPLE DESCRIPTION: COLOR–MATERIAL–MOISTURE–CLAY CONSISTENCY SAND DENSITY
0.0'	0.5'	RB				Brown clay
0.5'	10.0'	RB				Gray brown clayey shale
10.0'	20.0'	RB				Brown shale
20.0'	30.0'	RB				Brown gray sandy shale
30.0'	40.0'	CW			9.0'	Gray brown sandstone, shale
40.0'	50.0'	CW			10.0'	Same
50.0'	60.0'	CW			10.0'	Gray sandstone, shale
60.0'	70.0'	CW			9.6'	Gray sandstone slab, shale
70.0'	80.0'	CW			10.0'	Gray sandstone
80.0'	90.0'	CW			9.9'	Gray sandstone, shale
90.0'	100.0'	CW			10.0'	Gray sandstone
100.0'	110.0'	CW			10.0'	Same
110.0'	120.0'	CW			10.0'	Same
120.0'	130.0'	CW			10.0'	Same
130.0'	140.0'	CW			9.6'	Gray sandstone, shale, coal
140.0'	150.0'	CW			10.0'	Gray sandstone, shale

REMARKS: (Casing, Water Loss, Etc.)

Water Level	Time	Date	
			(Completion)

Layne-Western Company, Inc. 1010 WEST 39th STREET, KANSAS CITY, MISSOURI 64111

LW-59A

TEST BORING LOG

Project E.R.D.A. Boring No. 28 Sheet 2 of 2

Surface Elevation _____ Offset _____

Address _____ Date Started _____ Completed _____

City & State _____ Driller _____ Rig _____

Abbreviations: A.O. – Auger Only; H.A. – Hollow Auger; W.B. – Wash Bore; R.B. – Rock Bit; S.S. – Split Spoon; S.T. – Shelby Tube; C.W. – Core Water; C.A. – Core Air; F.B. – Finger Bit

DEPTH FROM	DEPTH TO	METHOD	PENETRATION RECORD: POCKET PENETROMETER	PENETRATION RECORD: NO. OF BLOWS	CORE RECOVERY	SAMPLE DESCRIPTION: COLOR–MATERIAL–MOISTURE–CLAY CONSISTENCY SAND DENSITY
150.0'	160.0'	CW			9.0'	Dark gray sandy shale
160.0'	170.0'	CW			10.0'	Same
170.0'	180.0'	CW			10.0'	Black shale
180.0'	184.0'	CW			4.0'	Same
184.0'	187.6'	CW			3.6'	Gray white cherty limestone
187.6'	190.0'	CW			19.0'	Black shale
190.0'	192.6'	CW			2.0'	Chert, white gray
192.6'	Total Depth					

REMARKS: (Casing, Water Loss, Etc.)

Water Level	Time	Date	
			(Completion)

Layne-Western Company, Inc. 1010 WEST 39th STREET, KANSAS CITY, MISSOURI 64111

ERDA Tar Sands Core 28
COUNTY: Barton

QUADRANGLE: Lamar North

LOCATION: SW1/4 SW1/4 SW1/4 . SEC. 30 T.33N R.30W

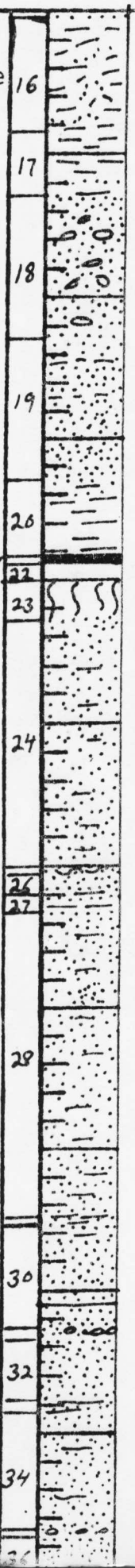
DATE: August 1977

LOCATION DESCRIPTION: 40 FSL, 17 FWL
4-1/2 miles north of Lamar

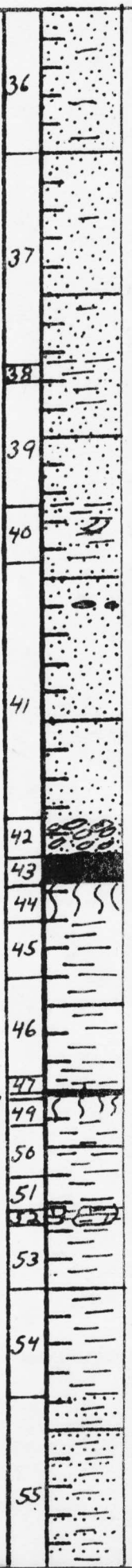
Elev. 977.0′ T.M. T.D. 187.0′

DEPTH FROM	DEPTH TO	BED NO.	LITHOLOGY
0.0	10.0	1	soil and sandy brown clay
10.0	20.0	2	sandstone, brown, argillaceous, small hematite concretions
20.0	30.0	3	shale, brown to gray, sandy (churn samples to 30.0 ft)
30.0	32.0	4	ss., cross bedded, intercalated with shale lenses, brown, weathered; flora zone (ferns) at 31.0-31.8 ft
32.0	34.0	5	shale, brown, zone of gray, sandy, inclined laminae
34.0	34.8	6	ss., brown, fine-grained
34.8	35.5	7	shale, brown, zones of gray, inclined ss. lenses
35.5	38.0	8	ss., brown, fine grained, cross-bedded, micaceous, sand sized specks fusain
38.0	40.0	9	shale, dk.gray, non calc.
40.0	41.8	10	shale, med. gray, sandy, micaceous, horizontal to inclined, lt.gray ss.laminae comprise about 20% of unit, flora of ferns, Cordaites near middle
41.8	44.3	11	ss., argillaceous grading downsection into predom. shale; ss. lenses, cross laminated at top to distorted "pull apart" structures (FROM slumpage?) at bottom
44.3	45.6	12	ss, gray weathered brown along joints, micaceous
45.6	46.3	13	shale, med. gray; flora of ferns (large tip leaves)
46.3	48.8	14	ss., med.gray, fine grained, few dk.gray shale laminae and paper thin wavy laminae of coal (bits of fusain)

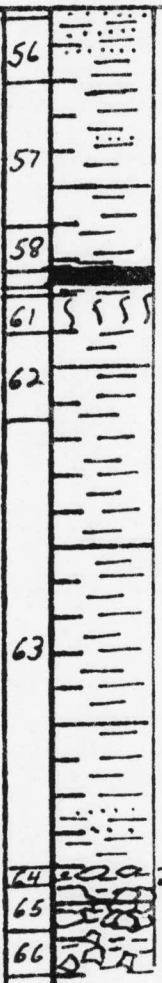
48.8	50.2	15	shale, dk. gray, approx. 30% of unit is lt. gray laminae and lenses of cross laminated ss. (ripples)
50.2	54.3	16	shale, med. gray, very sandy with lt. gray ss. laminae in form of contortions possibly caused by slumpage, some scour and fill; fern fronds, micaceous
54.3	56.6	17	shale, med. gray, sandy, 5% of bottom 1 ft. is lt. gray ss. laminae
56.6	61.7	18	conglomerate, approx. 10% of unit is clasts of dk. gray shale, coal, clayironstone and tan clay with coalified rinds; clasts in lenses to randomly oriented contortions, clasts .1 ft. dia., but most of granule size; lt. gray ss. matrix
61.7	66.6	19	ss., lt. gray, wavy lenses and pods separated by paper thin dk. gray shale laminae; filled burrow (bioturbite) structure
66.6	69.1	20	shale, black (wet) mica along bedding planes, non calc, gradational with overlying unit
69.1	69.4	21	coal, shiny, pyrite lense near bottom
69.4	70.0	22	lost core
70.0	71.5	23	underclay, med. gray carbonized roots
71.5	80.0	24	ss., lt. gray, abundant sand sized siderite concretions disseminated throughout unit, clay matrix gives lt. greenish gray appearance when wet; cross-laminated in places
80.0	80.3	25	ss., lt. gray, congl. appearance with wavy lens-like clasts of shale and coal
80.3	81.0	26	ss., whitish lt. gray, compact, non calc, fine-grained
81.0	81.7	27	ss., lt. gray and med. gray clay, interlaminated; nodular appearance; plant rootlets? near top
81.7	92.4	28	ss., lt. greenish gray, argillaceous, slumpage structure 84.0-85.0 ft.; paper-thin coal laminae at 88.3-88.5 ft; non calc.; vertical joints 82.0-84.0 ft.
92.4	92.7	29	ss., lt. gray and shale dk. gray (plant fragments) interlaminated
92.7	96.3	30	ss., lt. gray, fine grained .02 ft. thick coal lens at 95.7 ft; argillaceous; slump structures especially in top 2 ft.
96.3	96.8	31	ss., 1/8 to 1/4 mm grain size, conglomeratic, clasts of coal in form of lenses, rounded pods with ss. filling interiors; bottom .2 ft. especially conglomeratic; scour surface at bottom
96.8	98.9	32	ss., lt. gray, few paper-thin wavy coal laminae near bottom
98.9	99.3	33	ss., lt gray and coal laminae (bits of fusain) intercalated



99.3	103.4	34	ss., lt. gray approx 10% of unit is paper-thin coal laminae; some flame structures
103.4	103.7	35	congl., clasts of dk. gray shale, rounded, grape-size; lt. gray ss. matrix
103.7	110.0	36	ss. lt gray, approx 5% of unit is paper-thin coal laminae mostly horizontal wavy, micaceous, and dk. gray shale beds to .1 ft. thick randomly spaced
110.0	117.5	37	ss., lt. gray bits of coal disseminated in top part; shale laminae to .05 ft. thick comprise about 5% of unit and distributed randomly throughout interval
117.5	118.0	38	shale, med. gray sandy, pieces fusain
118.0	122.7	39	ss., lt. gray, 2 or 3 shale laminae in top 1 ft.
122.7	124.5	40	ss., lt. gray cross-laminated and dk gray carbonaceous shale and coaly material; interlaminated; flame structures
124.5	133.4	41	ss., lt. gray, few thin laminae of dk. gray shale and coal scattered throughout interval, especially in top 1 ft; congl. with pieces fusain at 126.0-126.2 ft.
133.4	134.9	42	conglomerate, 80% clasts with small amount of lt. gray ss. matrix; clasts tabular to spheroidal, rounded consist of tan clay or woody material, sandstone, dk. gray shale, clay ironstone, pieces coal poorly sorted range from .2 ft. long and .1 ft. thick to granules, some imbrication; gradational with overlying unit
134.9	135.8	43	coal, shiny, pyrite lenses and cleat fillings
135.8	137.0	44	underclay, dk. gray, Stigmarian roots; slickensided
137.0	139.0	45	shale, med. gray, non calc
139.0	142.7	46	shale, black; zone of sand-sized siderite concretions 140.6-140.9 ft.
142.7	143.0	47	shale, black, fragments of lt. gray recrystallized fossils
143.0	143.1	48	coal, shiny
143.1	144.2	49	underclay, med. gray, carbonized roots
144.2	146.0	50	shale, greenish gray, abundant snad sized siderite concretions
146.0	147.3	51	shale, black, mottled green at bottom
147.3	147.8	52	ls., nodular, lt. gray to brown, greenish clay matrix, fragments of small productids
147.8	150.0	53	shale, greenish gray, non calc.
150.0	153.9	54	shale, black, pyritiferous
153.9	160.0	55	ss., lt gray, cross-laminated, paper thin to .1 ft. thick lenses and pea sized pods (.01 ft.) in layers intercalated with black shale in equal amounts



160.3	162.0	56	shale, black (wet) intercalated with lt gray ss. lenses paper thin to .1 ft. thick comprises 40% of unit at top decreasing to 10% at bottom
162.0	166.0	57	shale, black (wet) less than 5% lt. gray ss. lenticular laminae
166.0	167.3	58	shale, black, brown clay ironstone band .2 ft. thick at 166.7
167.3	167.8	59	coal, shiny
167.8	168.0	60	shale, black, hard, slickensided
168.0	169.0	61	underclay med. gray, carbonized roots
169.0	171.5	62	clay, greenish gray, slickensided, bottom .5 ft. mottled black
171.5	184.0	63	shale, black, non calc.; 5% of unit is lt. gray ss. lenses and pods from 182.6-183.6 ft.
184.0	184.7	64	congl; white to pink chert clasts (.1 dia. to sand sized larger clasts subangular to subrounded while sand size is angular; black shale matrix
184.7	185.8	65	breccia, white chert clasts; voids AROUND large clasts (.2 ft. largest dimension) filled in by smaller chert fragments with a greenish gray to black clay matrix; 90% of unit is clasts
185.8	187.0	66	breccia, approx. 20% of unit is white chert clasts with greenish gray clay matrix



FR & COMP

WILDCAT

STATE MISSOURI 10-3-82 MAP NO. S-T-R 30-33N-30W S

OPER DNR GEOLOGICAL SURVEY SPOT APP SW SW SW INIT

P O BOX 250, ROLLA, MO CO BARTON S

WELL 28 ERDA - TS ELEV. 977 GR FIN

CONTR LAYNE-WESTERN 40' fsl, 17' fwl, Sec

FIELD WILDCAT

IP D&A TOPS NOT PICKED

API 24-011-20022 RTD 187 + 790

SPUD 8-8-77, no surf csg TD IN PENN

RTD 187, log

D&A FIRST REPORTED AND COMPLETED 8-8-77 COMP ISSUED 10-17-77